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TRANSMITTAL FORM

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Total Number of Pages in This Submission

Application Number	10/528,210
Filing Date	03/17/2005
First Named Inventor	Stephen R. Smith
Art Unit	1657
Examiner Name	Tiffany Maureen Gough
Attorney Docket Number	3323

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
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- ☐ After Allowance Communication to TC
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- ☑ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please Identify below):

Copy of Notice of Non-Compliant Appeal Brief; Corrected Appeal Brief; and Return Postcard

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	BECK & TYSVER, P.L.L.C.		
Signature	Stephanie J. James		
Printed name	Stephanie J. James		
Date	7/21/08	Reg. No.	34,437

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ART UNIT	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

Notification of Non-Compliant Appeal Brief (37 CFR 41.37)	Application No. 10/528,210	Applicant(s) SMITH ET AL.	
	Examiner T.Gough	Art Unit 1657	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on *03 July 2008* is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file anamended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer. **EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.**

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.

2. ☒ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).

3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).

4. ☐ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).

5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi))

6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).

7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).

8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner **and relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).

9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).

10. ☒ Other (including any explanation in support of the above items):

c(3) The brief does not contain the status of all claims.
c(8) The "Claims Appendix", should start on a new page.
The entire brief is not required, only the sections that were found defective.

DARLENE BROWN
PATENT APPEAL CENTER SPECIALIST

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCE

Applicant:	**Stephen R. Smith et. al**	Examiner:	**Tiffany Maureen Gough**
Serial No.:	**10/528,210**	Group Art Unit/TC:	**1657**
Filing Date:	**March 17, 2005**	Docket No.:	**3323**
Title	**Antimicrobial Composition and Method for Use**		

Date of Deposit: 7-21-08
I hereby certify that this paper is being facsimile transmitted to the USPTO or deposited in the United States Postal Service, as first class mail, in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450

Signature: Mary S. Keller
Printed Name: Mary S. Keller

Appeal Brief

Appellant appeals from the final Office Action mailed November 29, 2007, rejecting all pending claims on the basis of obviousness. The Appellant requests that the Board overturn the Examiner's decision and remand the case to the Examiner for allowance.

This brief is filed within two months of the date of filing the notice of appeal and is accompanied by a check for the fee set forth in §41.20(b)(2).

TABLE OF CONTENTS

I. Real Party in Interest

The real party in interest in the above-identified application is Neova Technologies, Inc., the current assignee of record of this application.

II. Related Appeals and Interferences

There are no prior or pending appeals, interferences or judicial proceeding known to appellant, the appellant's legal representative, or assignee that is related to, directly affects or would be directly affected by or have a bearing on the Board's decision in the pending appeal.

III. Status of Claims

Claims 1-48 have been canceled. Claims 49-69 are rejected. Claims 49-69 are appealed.

IV. Status of Amendments

All amendments have been entered.

V. Summary of Claimed Subject Matter

Claims 49 and 68 are independent. Claims 50-67 depend from claim 49; claim 69 depends from claim 68.

A. Claim 49

Claim 49 recites an orally administrable antimicrobial composition for suppressing the growth of enteric pathogens in the gut of livestock. The composition is comprised of three components:

a) a cell wall lysing substance or its salt;
b) at least one of dried egg powder and albumen; and
c) a sequestering agent.

Such a composition is discussed within the specification at page 4, first full paragraph (Paragraph [0010]), using the pagination of PCT publication WO 2004/026334, for example. In this discussion, element "b" is described as "an antimicrobial substance". Page 4, 5th full paragraph (Paragraph [0014]), specifies that "the antimicrobial substance may be dried egg powder and/or albumen."

B. Claim 68

Claim 68 recites an orally administrable antimicrobial composition for treating gastrointestinal infections in livestock. The composition is comprised of four components:

a) a cell wall lysing substance or its salt;
b) at least one of dried egg powder and albumen;
c) a sequestering agent; and
d) a lantibiotic.

Such a composition is set forth in the specification, for example, at page 6, second full paragraph (Paragraph [0025]). In this discussion, element "b" is described as "a antimicrobial substance". Page 6, 5th full paragraph (Paragraph [0028]), specifies that "the antimicrobial substance may be dried egg powder and/or albumen."

VI. Grounds of Rejection to be Reviewed on Appeal

The Appellant requests review of the obviousness rejections of all pending claims. All pending claims, claims 49-69, are rejected under 35 U.S.C. §103(a) as being unpatentable over Unilever PLC (EP 0466244 A1, 1992, hereafter "Unilever") in view of Medipharm (EP 0955061 A1, 1999, hereafter "Medipharm"), Ibrahim (Natural food antimicrobial system, 2000, hereafter "Ibrahim"), and Nippon JP (62145025, 1987, hereafter "Nippon").

VII. Argument

A. Overview of Appealed Rejection

The Appellant's invention is a composition that is taken orally by livestock to combat pathogens within their intestinal system, i.e. in vivo. It is particularly useful in

combating *Clostridium sp., E coli.*, and *Salmonella sp.* Both independent claims 49 and 68 include a recitation of "at least one of dried egg powder and albumen".

For all rejections, the Examiner relies primarily upon Unilever that discloses an additive for feedstuffs, cosmetic products or pharmaceutical products and other things that combats the growth of bacteria within these products, particularly during storage and shipment and on the shelf, i.e. ex vivo.

In applying the cited references to make the obviousness rejection, the Examiner notes that the recited element of egg/albumen is not shown in Unilever. For this egg/albumen element, the Examiner borrows freeze-dried eggs from Medipharm. The Examiner takes the position that to pluck dried eggs from Medipharm and insert them into the Unilever composition is obvious, particularly in light of the teachings of Ibrahim and Nippon regarding antimicrobial properties of eggs.

The Appellant argues that to arrive at the claimed composition based on the cited art, one must rely upon a primary reference that is non-analogous art. Further, one must piece together disparate references using hindsight, in a manner that would not have been obvious to one of ordinary skill in the art at the time of invention. Thus, a prima facie case of obviousness has not been made with respect to the independent claims or to the dependent claims.

B. Legal Standards for Determining Obviousness

As set forth by the Supreme Court in Graham v John Deere Co. of Kansas City, 383 U.S. 1 (1966) and reiterated by the Court in KSR Intern. v. Teleflex, 127 S.Ct. 1727, 1734 (2007), an objective analysis of obviousness includes consideration of three questions:

> [T]he scope and content of the prior art are . . . determined; differences between the prior art and the claims at issue are . . . ascertained; and the level of ordinary skill in the pertinent art resolved.

Graham v. John Deere at 17.

C. Scope and Content of Cited Art and Differences Between the Cited Art and the Claimed Invention

1. Unilever is Nonanalogous Art and Therefore Should Not be Used as Prior Art for an Obviousness Rejection

A prerequisite to making a finding on the scope and content of the prior art is to determine what prior art references are pertinent. In re Clay, 966 F.2d 656, 658 (Fed. Cir. 1992). A reference is analogous if it is from the same field of endeavor as the invention. Id. at 658-659. Similarity in the structure and function of the invention and the prior art is indicative that the prior art is within the inventor's field of endeavor. In re Deminski, 796 F.2d 436, 442 (Fed. Cir. 1986). If a reference is outside the inventor's field of endeavor, it is still analogous art if the reference "is reasonably pertinent to the particular problem with which the inventor is involved." In re Clay, 966 F.2d 656, 659 (Fed. Cir. 1992). See also: State Contracting & Engineering Corp. v. Candotte America, Inc., 346 F.3d 1057, 1069 (Fed. Cir. 2003).

Unilever is the primary reference that the Examiner relies upon in rejecting the claims as obvious. Unilever discloses a mixture shown to have a "much better inhibiting effect on *Listeria monocytogenes*" than other tested compositions. Page 3, lines 55-56. "The main application of [Unilever's] invention is in connection with the production, packaging and storage of food products and the cleaning of equipment used therefor, but the invention can also be applied for non-food uses, examples of which comprise animal feedstuffs, cosmetic products, and pharmaceutical products and their production." Page 3, lines 47-50.

All of the prior art described in Unilever's Background of the Invention (page 2, line 24 through page 3, line 15) is directed to compositions that prevent bacterial growth in food products prior to consumption; no prior art described in Unilever discusses the issue of microbes within the gut of an animal nor how to combat them. Nowhere within Unilever is expressed any interest in or concern for combating microbe growth within the gut of an animal. Nowhere within Unilever is described what would happen to the Unilever compound after it was ingested, i.e. whether it would have any efficacy on pathogens within the intestinal environment. Unilever performs no testing of its composition within an intestinal environment nor in conditions that simulate an intestinal environment.

Thus, it is abundantly clear that Unilever focuses exclusively on the ex vivo problem of safe food preparation, preservation and storage.

In contrast, Appellant's composition focuses exclusively on the in vivo problem of animal health. Thus, Unilever's composition is not in the same field of endeavor as Appellant's composition.

Further, Unilever cannot be considered to be reasonably pertinent to the particular problem the Appellant was seeking to solve. Unilever does not describe, nor is any other art cited that describes, that lysozyme would have any in vivo effect or application. Therefore, there would be no reason that one of skill in the art would select a lysozyme component on which to base a composition for in vivo use.

Accordingly, Unilever is non-analogous art that should not be cited against the Appellant's claims.

2. Unilever does not disclose egg/albumen component

The Appellant concurs with the Examiner's assessment that Unilever does not disclose or describe element "b" of claims 49 and 68 (and all claims that depend therefrom): "Unilever differs from the claims in that their composition is not disclosed as containing egg powder or albumen and further to suppress the growth of enteric pathogens, specifically *Clostridium sp., E. coli* and *Salmonella sp.*" Office Action of November 29, 2007, p. 4.

3. There is No Reason that One Would be prompted to Modify Unilever with Medipharm Eggs

Because Unilever does not show Appellant's egg element, the Examiner combines Unilever with Medipharm for its use of freeze-dried eggs in an oral product for the prevention and therapy of porcine gastroenteric infections (i.e. the rotavirus, coronaviruses and enteropathogenic and enterotoxigenic bacterial strains of *Clostridium sp., E. Coli* and *Salmonella Sp.*).

The Supreme Court has made clear that there is no per se, rigid rule that a finding of obviousness requires that a motivation to combine references be spelled out in the references. Nevertheless, the Court did recognize that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant

field to combine the elements in the way the claimed new invention does." KSR International Co. v. Teleflex Inc., et al., 127 S.Ct. 1727, 1741 (2007). The Federal Circuit has since noted the necessity to find a reason to combine references to reach a conclusion of obviousness:

> As long as the [teaching/motivation/suggestion] test can provide 'helpful insight' to an obviousness inquiry. [Citing KSR at 1731.] Thus in cases involving new chemical compounds, it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish prima facie obviousness of a new claimed compound.

Takeda Chemical Industries, Ltd. v. Alphapharm Pty. Ltd., 492 F.3d 1350 (Fed. Cir. 2007).

The Appellant has not found, and the Examiner has not cited, any reason or motivation within the text of the Unilever patent to modify it in any way that would address the problem of inhibiting growth of enteric pathogens in the gut of livestock. And, more specifically, the Appellant has not found, and the Examiner has not cited, any reason or motivation in Unilever to add Medipharm's freeze-dried eggs for any purpose.

Further, the Appellant does not find, and the Examiner has not cited, any reason or motivation within the text of the Medipharm patent to use the composition of Unilever or any other composition having antimicrobial activity occurring ex vivo and adapted for suppressing the growth of *Listeria* bacteria in products, and adding egg or albumen to suppress enteric pathogens in the gut of livestock (i.e. in vivo).

In the absence of any motivation within these references themselves, the Examiner turns to Ibrahim and Nippon to provide a reason that one would add Medipharm's eggs to Unilever's composition. These references, however, cannot serve to provide a reason to include egg or albumen in just any antimicrobial composition. The Appellant's claimed composition has a component known to kill certain microbes ex vivo (i.e. lysozyme to kill *Listeria monocytogenes*). Appellant's claimed composition has a component known to kill certain microbes in vivo (i.e. freeze-dried eggs to kill *Clostridium, E. Coli* and *Salmonella*). However, there existed no teaching nor motivation nor suggestion in any of the cited art to combine an ex vivo agent with an in vivo agent, and particularly no such teaching that such combination would be more effective

against enteric pathogens than freeze-dried eggs without a lyzing substance or its salt. This is a critical leap of imagination and invention that yields the claimed composition and is not in any way revealed by any of the cited art.

The Appellant notes that the Examiner has not offered a single example of an ex vivo antimicrobial composition (like Unilever) being adapted to be effective in fighting bacteria in vivo.

Moreover, there are additional reasons why a person skilled in the art would not be brought to combine the references as suggested by the Examiner. In the absence of a teaching in one of the cited references, a person skilled in the art would not automatically assume that the antimicrobial composition of Unilever which is effective in suppressing *Listeria* bacteria on a product, would also be effective (when combined with egg or albumen) to suppress enteric pathogens in the gut of livestock. The bacteria addressed by Unilever and the Appellant are different, and these different bacteria require and thrive in very different environments, i.e. pH, temperature, water content or activity, co-existence with other bacteria, etc. There is no teaching in Unilever that the lysozyme composition would be able to withstand the gastric digestion within the gut of livestock.

Because of these differences, one skilled in the art could not readily conclude, based on the bacterial suppression of the Unilever composition applied to a product ex vivo, that the Unilever composition, as modified under the Examiner's proposal, would have any effectiveness whatsoever against enteric pathogens in the gut of livestock.

Thus, the Appellant asserts that the Examiner has failed to make a prima facie case of obviousness because the Examiner has not provided a reason to combine Medipharm's eggs with Unilever's composition, and in this situation, involving the purported transformation of an ex vivo application to an in vivo application, a showing of reason should be necessary. Appellant therefore submits that claims 49 and 68 (and all claims depending therefrom) are patentably distinguishable over the cited art.

4. There Was Not a Finite Number of Options to Modify Unilever

Presuming someone of skill in the art were motivated to modify Unilever to create an in vivo antibacterial composition, the addition of eggs or albumen was not an obvious choice. A person of ordinary skill, equipped with ordinary creativity, would

have been faced with a large number of potential agents to add to combat in vivo bacteria, so the selection of egg would have required an inventive inspiration.

The Supreme Court has noted the importance that there be "a finite number of identified, predictable solutions" for a combination to be obvious:

> When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp.

KSR at 1742.

In finding non-obviousness a treatment composition for diabetes, where the cited art was a composition for treating epilepsy, the Federal Circuit noted that the number of solutions need not only be finite, but also small within the context of the art:

> The passage above in KSR posits a situation with a finite, and in the context of the art, small or easily traversed, number of options that would convince an ordinarily skilled artisan of obviousness.

Ortho-McNeil Pharmaceutical, Inc. v. Mylan Laboratories, Inc., 520 F.3d 1358 (Fed. Cir. 2008).

The Appellant asserts that had someone of skill been motivated to start with the Unilever composition and modify it for an in vivo application to combat enteric pathogens, the person would have been faced with a huge number of options for substances to add.

While performing research and development work in connection with the claimed invention, the inventors combined the following antimicrobials either with lysozyme alone or with lysozyme and EDTA in an attempt to arrive at an antimicrobial composition effective against enteric pathogens, before determining that the claimed composition offered better results than any of these attempted combinations:

Antimicrobial peptides:
Protamine
Lactoferricin
Lactoperoxidase
Lactoferrin
Monolaurin
Glycine
L-lysine

Glucosamine
Phospholipase (PA2)

Natural plant extracts:
Liquid smoke
Mace extract
Rosemary extract
Ginger extract
Tea tree oil
Licorice extract
Olive oil
Bioflavonoid (Vitamin P)
Angelica dahurica extract
Angelica pubescens extract
Astragal extract
Black tea extract
Burnet extract
Chinese tea extract
Fennel extract
Geranium extract
Green tea extract (Sunphenon)
Honeysuckle extract
Hops extract
Houttuynia extract
Isodon extract
Ivy extract
Coptis extract
Mukurossi extract
Peach leaf extract
Phellodendron extract
Polygonatum extract
Sage extract
Sophora extract
Sweet bay extract
Yucca extract
Zanthoxylum extract
Perillaldehyde
Grapefruit seed extract
Xanthones
Chromone derivatives
Willow bark extract

Organic acid and their salts:
Ascorbic acid
L-Glutamic acid
Sodium acetate
Usinic acid
Sodium Propionate
Propylparaben

Other compounds:
D-sorbitol
Sarkosyl
Mutanolysin
Dermasoft
Psammaplin A
Variolin A (alkaloids)
N(3')-methyltetrahydrovariolin B
Meridine
Dermaseptin (adenoregulin)
Sinharines
Penimides
Illukumbins
Farnesol
Phenoxyethanol

5. The Art of Record Does Not Teach as Much as the Examiner Ascribes to It

On page 9, lines 4-10 of the Action, the Examiner purports to set forth that which is taught in the cited references as follows:

> However, the art of record clearly teaches the claimed composition's components, which are effective in treating and preventing gastrointestinal infections caused by enteric pathogens such as those claimed, i.e. *Clostridium sp., Salmonella sp., E. Coli.* Further, the claimed components; EDTA, citric acid, nisin, lysozyme and albumen, of applicant's compositions are well known for their bacteriostatic/bactericidal effectiveness against both gram positive and gram-negative bacteria.

The Examiner cites no page or line numbers in the cited art for these purported teachings. The Appellant submits that the Examiner's representation as to the teachings of these references is unfounded. The Examiner asserts, incorrectly, that the cited references offer teachings with regard to each component of the composition with regard to enteric pathogens. For example, Unilever offers no teaching of components for treating or preventing *Clostridium, Salmonella* or *E. Coli*, and more specifically, none of the art shows a use of lysozyme for combating gastro-intestinal microbes. The Examiner's statement regarding the prior art is inaccurate and exaggerates what is shown in the art.

6. The Appellant's Composition Offers Synergistic Effects

As described throughout the Appellant's specification, the Appellant's composition provides synergistic effects that would not be expected from the known qualities of its components. In paragraph 48 (referencing the WIPO publication of the present application):

> In a pilot study, it has been shown that by adding dried egg powder and a sequestering/metal-chelating agent, . . ., there is an increased efficacy for inhibiting *Clostridium perfringens*. It is anticipated that this is due to synergistic effects between lysozyme, dried egg powder and the sequestering/metal-chelating agent. Experimental data relating to the synergies between lysozyme, citric acid and albumen are shown in Figure 2.

Further, in paragraph 50 (referencing the WIPO publication of the present application):

> There is also some indication that the sequestering agent/metal-chelating agent, i.e. citric acid, may also help to prevent the growth of Gram negative pathogens such as *Escherichia coli* and *Salmonella*. In a further pilot study using Blend 1, it was found that there was an increase in antimicrobial activity against Gram negative pathogens. It has been suggested that the reason for this is that the sequestering/metal-chelating agent works as an anti-oxidant and is synergistic with lysozyme in these situations. By keeping the individual gut of livestock... more acidic, the overall effectiveness of inhibiting *Clostridium perfringens* and other pathogens may be increased.

The Examiner has cited no art that describes that such effects would be expected. In particular, the Examiner has cited no art that describes that maintaining an acidic gut with one component in a compound will increase the effectiveness of other components in the same compound.

Further, the synergistic effect of combining the three recited components yields a composition that is cheaper, given its effectiveness, than would be a composition with only two of recited components. As described in the specification at paragraph 48-49:

> Figure 2 illustrates that there is an efficacy for inhibiting *Clostridium perfringens* at approximately 50 ppm when using the above-described Blend 1 on MIC plates. It should be noted that, although the relative amount of lysozyme used in the present pilot study decreased compared to the concentration used in the pilot study of Figure 1, the efficacy of the composition increased. It is also important to noted that lysozyme represents only a fraction of Blend 1 used in the presently described pilot study (50 ppm) that led to the generation of the data illustrated in Figure 2. An advantage of this embodiment of the invention is the relative low costs of both albumen and citric acid as compared to lysozyme.

7. Secondary Considerations

Under Graham, evidence of secondary consideration, such as "commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented." Graham v. John Deere, 383 U.S. 1, 17-18 (1966).

The Appellant has not submitted evidence regarding secondary considerations during prosecution of this case, believing that the inquiry into the first three Graham questions yields a conclusion of nonobviousness and therefore evidence of secondary considerations is not necessary at this time.

D. Level of Ordinary Skill in the Art

The level of skill in the art of veterinary medicine or animal pathology is high. However, it does not extend to the non-analogous arena of preservation or preventing spoilage of foodstuffs, cosmetics, pharmaceuticals and other products.

CONCLUSION

The Appellant respectfully requests a decision by the Board that the claims are not obvious in light of the cited art.

Respectfully submitted,
Neova Technologies, Inc.
By its attorneys:

Date: 7/21/08

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VIII. Claims Appendix

Claims 1-48 (Cancelled)

Claim 49 (previously presented):

An orally administrable antimicrobial composition for suppressing the growth of enteric pathogens in the gut of livestock, the antimicrobial composition comprising:

(a) a cell wall lysing substance or its salt;

(b) at least one of dried egg powder and albumen; and

(c) a sequestering agent.

Claim 50 (previously presented):

The orally administrable antimicrobial composition according to claim 49, wherein the enteric pathogens include members of the following families of bacteria: *Clostridium perfringens. Escherichia coli, Salmonella Typhimurium and Salmonella Mbandaka.*

Claim 51 (previously presented):

The orally administrable antimicrobial composition according to claim 49, wherein the cell wall lysing substance or its salt is lysozyme.

Claim 52 (previously presented):

The orally administrable antimicrobial composition according to claim 49, wherein the antimicrobial composition includes both dried egg powder and albumen.

Claim 53 (previously presented):

The orally administrable antimicrobial composition according to claim 52, wherein the sequestering agent is an organic acid.

Claim 54 (previously presented):

The orally administrable antimicrobial composition according to claim 53, wherein the sequestering agent is a metal-chelator.

Claim 55 (previously presented):

The orally administrable antimicrobial composition according to claim 53, wherein the sequestering agent is selected from the group consisting of: (a) disodium ethylenediamine tetraacetate (EDTA); (b) citric acid; (c) chitosan.

Claim 56 (previously presented):

The orally administrable antimicrobial composition according to claim 49 further includes a lantibiotic.

Claim 57 (previously presented):

The orally administrable antimicrobial composition according to claim 56, wherein the lantibiotic is nisin.

Claim 58 (previously presented):

The orally administrable antimicrobial composition according to claim 56, wherein the ratio of the cell wall lysing substance or its salt, the at least one of dried egg powder and albumen, the sequestering agent and the lantibiotic, is 50:150:50:20 by weight.

Claim 59 (previously presented):

The orally administrable antimicrobial composition according to claim 49, wherein the antimicrobial composition is in powdered form.

Claim 60 (previously presented):

The orally administrable antimicrobial composition according to claim 49, wherein the antimicrobial composition is in aqueous solution form.

Claim 61 (previously presented):

The orally administrable antimicrobial composition according to claim 60, wherein the antimicrobial composition is water-soluble to allow the antimicrobial composition to be mixed with drinking water for administration to the livestock.

Claim 62 (previously presented):

The orally administrable antimicrobial composition according to claim 49, wherein the antimicrobial composition is a feed additive.

Claim 63 (previously presented):

The orally administrable antimicrobial composition according to claim 49, wherein the ratio of the cell wall lysing substance or its salt, the at least one of dried egg powder and albumen and the sequestering agent, is 2:5:3 by weight.

Claim 64 (previously presented):

The orally administrable antimicrobial composition according to claim 49 further including dried egg powder, the dried egg powder being capable of suppressing additional microbes in the livestock gut.

Claim 65 (previously presented):

The orally administrable antimicrobial composition according to claim 64 wherein the additional microbes include molds and viruses.

Claim 66 (previously presented):

The orally administrable antimicrobial composition according to claim 49 wherein the antimicrobial composition includes dried egg powder and the dried egg powder is capable of suppressing additional enzymes in the livestock gut.

Claim 67 (previously presented):

The orally administrable antimicrobial composition according to claim 66 wherein the additional enzymes include proteases and lipases.

Claim 68 (previously presented):

An orally administrable antimicrobial composition for treating gastrointestinal infections in livestock, the antimicrobial composition comprising:

(a) a cell wall lysing substance or its salt;

(b) at least one of dried egg powder and albumen;

(c) a sequestering agent; and

(d) a lantibiotic.

Claim 69 (previously presented):

The orally administrable antimicrobial composition according to claim 68 wherein the gastrointestinal infections include necrotic enteritis, *Clostridium perfringens* enteritis and diarrheal disease.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.